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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dov Ingman

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EXAMINER

KANG, JULIANA K

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/884,463	<b>Applicant(s)</b> INGMAN ET AL.	
	<b>Examiner</b> Juliana K. Kang	<b>Art Unit</b> 2874	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 11-14, 16-30, 33-49 and 51-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8, 11-14, 44-47, 53, 54, 57-62 and 66 is/are allowed.
- 6) ☒ Claim(s) 16-30, 33-35, 38-43, 48, 49, 51, 55, 56 and 63-65 is/are rejected.
- 7) ☒ Claim(s) 36, 37 and 52 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. Applicant's communication filed on February 26, 2006 has been carefully studied by the Examiner. The arguments advanced therein are not persuasive and the rejections based upon prior art made of record in the previous office action are hereby maintained. Thus this action is made final.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 16-21, 33-35, 42, 48, 49, 51, 55 and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by Lange et al (U.S. Patent 4,705,571).

Lange et al disclose an optical fiber bundle comprising: a plurality of cores (GA1, GA2, GA3); and a cladding layer (filling compound, FCS) wherein the plurality of cores are embedded within the same cladding layer (see Fig. 2 and claim 17 of Lange et al). Lange et al further disclose that the filling compound is comprised of many different materials including hydrophilic fumed silica, hydrophobic fumed silica (see column 4 lines 3-5), thixotropic agent (see column 8 line 1) and polymer (polyolefin, see column 3 line 12). Lange et al also disclose an over cladding (CS, see Fig. 2). Lange et al disclose fumed silica. Fumed silica is known in the art to have particle sizes in the nanometer ranges. Please note, regarding the rejections above, that method claims 33-

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35 and 42 parallel article claims without the introduction of any particular manufacturing methods, so that it is proper to examine the articles and method claims together.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 22-30, 43, 56, 64, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lange et al (U.S. Patent 4,705,571).

As described above Lange et al disclose the claimed invention except the optical waveguide stacked on a substrate. Placing an optical fiber on a substrate is well known in the art to secure or to support optical fibers. Thus, it would have been obvious to one with ordinary skill in the art at the time the invention was made to place Lange et al's optical fiber on a substrate either to secure or support the optical fiber for further coupling with other optical elements. Please note, regarding the rejections above, that method claim 43 parallel article claims without the introduction of any particular manufacturing methods, so that it is proper to examine the articles and method claims together. Regarding claim 64 and 65, since Lange et al's cladding layer is mixture of hydrophilic and hydrophobic particles, some hydrophobic particles are inherently placed over hydrophilic particles.

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6. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lange et al (U.S. Patent 4,705,571) and further in view of Baney et al (U.S. Patent 4,275,118).

As described above, Lange et al teach the claimed invention except the method step of immersing the fiber structure in a water-alcohol medium and drying. Baney et al teach immersing an object into a water-alcohol medium and drying methods to coat the object with colloidal silica to provide stable dispersion of colloidal silica. Thus using such method steps of Baney et al in Lange et al would have been obvious to one having ordinary skill in the art to make the coating of silica particle with stable dispersion.

7. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lange et al (U.S. Patent 4,705,571) and further in view of Tanaka et al (U.S. Patent 4,675,040).

As described above, Lange et al teach the claimed invention except the method step of drawing and drying. Tanaka et al teach method of making optical fiber with method steps of drawing and drying (see abstract). Drawing and drying is well known method steps in the art as taught by Tanaka et al. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use well known method steps of drawing and drying as taught by Tanaka et al in Lange et al to make the optical fiber with low manufacturing costs.

***Allowable Subject Matter***

8. Claims 1-8, 11-14, 44-47, 53, 54, 57-62 and 66 are allowed.

Claims 36, 37 and 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

It appears that there is no prior art made of record that teaches or reasonably suggests an optical fiber comprising a core and a thixotropic cladding layer wherein the thixotropic cladding layer further comprises an inner layer of hydrophilic nano-particles that proximate the surface of the core and an outer layer of hydrophobic nano-particles that is placed around the inner layer of hydrophilic nano-particles.

### ***Response to Arguments***

9. Applicant argues that the Lange reference do not teach the claimed cladding layer. Applicant argues that Lange's filling compound is not a cladding layer because Lange never refers to the filling compound as a "cladding." The Examiner does not agree with this. Lange's filling compound can be a cladding layer. It is known in the art to have a plurality of layers (cladding layers) around a core. Please note that the present claims do not recite that the thixotropic cladding layer is in contact with the core. Any layer proximate to the core affects the light guiding property. Thus, Lange's layer (FC) that proximate the core can be referred as a cladding layer. Further more, the recited term "waveguide" in claims 22-30 is a broad term wherein Lange's CT and LW can be referred as a waveguide. In which case the waveguide is in direct contact with the thixotropic cladding layer.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lange et al (U.S. Patent 4,370,023) teach a thixotropic layer formed around a light waveguide (GF). The light waveguide (GF) shown in the figure is represented with one glass material.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

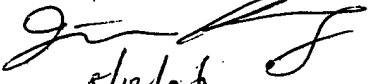
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (571) 272-2348.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**JULIANA KANG**  
**PRIMARY EXAMINER**

  
5/12/06